171 use honey dew which forms on Phragmites communis, also on rush, Juncus; Yavapai obtain it principally from willow, but also from cane.

262 Tübatulabal also occasionally sucked sections
263 of freshly cut cane for its sweetness (SM).

Saline crystals which form in dry hot weather
258 on salt grass made into "salt" (tu·t). Salt grass
137 grows in saline areas, on valley floors, at base of foothills; its utilization among Tübatulabal
824 depended on weather, as "after a rain it takes a month for salt grass to get salt again" (SM). Grass cut, spread out on mats to dry in sun; after grass thoroughly dry same process followed as described above for obtaining honey dew, save that collected crystals made up into balls or flat cakes instead of being spread on tule tray. Chunks
[272 equal to 2-3 full tablespoons broken off dry ball,
278 dissolved in cupful of water and drunk either for
751] refreshment or as laxative and to rinse out stomach. Salt-grass crystals also obtained by children who took willow switches and "swept" salt grass with them early on summer mornings; when sufficient quantity of crystals had adhered to stick, child took it to shady spot and licked off crystals. Fresh salt grass soaked in water and this
[262 water sprinkled over raw chopped clover, or sprigs
263] of salt grass and clover rolled between hands and eaten. Substance manufactured from salt grass never used to season meat or mushes.

● 314 Chewing gum made from milky juice of Asclepias
824 erosa Torr. (pololi·wa·bĭ·l); stalk of plant cut near top before it blossomed and juice collected in 4-in. tubular sections of jointed stalk of Eriogonum elongatum gramineum n. var. Stokes (ined.), (ǩiko·ništ). Joint of stalk served as natural stopper for bottom end of tubular section; juice run into stalk through open upper end; filled sections of stalk set in hot ashes to roast until plant juice inside has congealed; stalks then cut open, gum removed and chewed. This gum "better than store gum" (ES).

262 Meals.- Meals eaten twice daily around sunrise
264 and before sundown. At morning meal (wi·lil) and evening meal (tu·kil) men, children ate first, then women. Meat eaten at both meals, "if people
[415] had it." Men, women used spoons (ta·mil) made from antelope horn (ša·wun) for eating acorn mush (SM), or wooden spoons (FP); PN said spoons of elk, antelope horn not made. Acorn mush eaten with fingers (MM). No formula spoken before eating. Children pieced during day; "mothers gave
[753 them a cup of chia gruel" (SM). Food rarely eaten after dark as ghosts "come around at night; they
774 might throw something in the food that would make
609] a person sick" (SM, FP). Because strangers potential enemies who might put poison in food, person avoided eating with them. Women when out for day gathering seeds, tending tobacco, etc., took lunch with them which they ate about 10 or 11 a.m.; men hunting deer "didn't take any food; they came home in the evening" (FP).

[p. 19 (b)]

291 These 2 pieces were then seamed together from
281 front of sole as far up as ankle and also seamed to each side of back piece. In front, from ankle upward 2 side pieces were tied together with 2 sets of buckskin thongs; sometimes upper set of thongs was wrapped around leg and tied either in
[314] front or back. To make soles wear longer, melted pitch from Digger pine smeared over outside of
[412] soles (FP). Deerbone awl used to punch holes for seams, which were stitched with sinew. Moccasins made by men; worn by men, women in summer, "not in rainy weather" (SM), when hunting, wood gathering, piñon gathering, etc.; children also wore them if "going some place," but footgear was not worn habitually or on short trips.

Sandals (same name as moccasins) were made of heavy buckskin sole to which a straight strip of buckskin 3 in. wide, 8 in. long was sewed in back (fig. 4; Mus. cat. no. 1-28227, 15-10538). When worn, this buckskin flap was brought upward

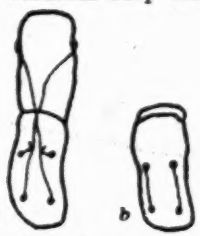

Fig. 4. Sandal. a, front view, showing strap arrangement; b, under side of sole, with strap.

to lie flat against back part of lower leg. Flap secured against leg by long buckskin thong, middle part of which held flap against lower leg. Ends of thong were brought forward on either side of leg, crossed in front over instep and threaded downward through 2 slits on each side of sole at instep; ends were then run up on under surface of sole to 2 holes underneath great and 4th toes and threaded up through these 2 holes. One end of thong passed between great and first toe, other between 3d and 4th toe; ends tied to upper sections of thong just below point where these were crossed over instep. Such sandals were used only when roasting piñons, to protect feet "when there was a hot fire to walk around" (SM). Fiber sandals never made, used.

292 Snowshoes not used, there being "not much snow
132 in the valley" where majority of semipermanent winter settlements were situated.

302 Coiffure.- Men wore hair long, loose (SM); sometimes parted it in middle and tied it in back (FP); never braided it. Women wore hair long, loose, parted, banged in front (Gayton, 1929, pl. 97a, b); banging done by holding front
[372] hair out from forehead in bunch, burning ends off with glowing stick of Atriplex canescens James (cĭw'wĭ·ĭbĭ·l). Woman's back hair sometimes braided, tied (FP wore hair thus; aboriginal?). When pounding acorns, otherwise employed in hot

177
372 steel, but we used the 2 pieces of stone and no
462 steel" (SM). Quartz for these strike-a-lights
[439] obtained from Koso Indians at Koso (FP).

Firewood.- Small trunks of willow (ha·l),
313 Salix laevigata Bebb., branches of Fresno tree
(a·wilibĭ·l), Fraxinus oregana Nutt., stream
alder (pawiču·l), Alnus rhombifolia Nutt., and
dry oak used chiefly for firewood (kutuga´t);
cottonwood (u·'ut, generic name for tree), "too
light" (SM). Firewood broken into 3 to 3 1/2-ft.
lengths for carrying in pack basket; women
[462 packed on back loads of slightly longer lengths,
482] but "not too heavy" (FP); men brought in larger
pieces on shoulder.

GLUE, PITCH, AND ASPHALT

381 Glue.- Deer horns boiled in small amount of
water, in pot, to obtain glue (a·wadin pa·hn,
horn water); used to apply sinew backing to bows.

● 314 Pitch.- Several varieties pitch (ša·num) used
824 for different purposes; pitch from Digger pine
415 applied to soles of moccasins to make them wear
longer (FP); pitch from bull pine smeared over
torches used in quail hunting. Basketry water
bottles made watertight by putting handful of
red earth of same variety used for face paint,
plus lump of piñon-pine pitch inside finished
bottle, together with quantity of heated pebbles
about size of person's thumb. Hot pebbles shaken
vigorously inside basket for 5-10 minutes, thus
causing pitch to melt, combine with red earth,
and coat inside of container. Hot melted pitch
also smeared over outside of bottle with small
stick; when it had cooled slightly red earth,
mixed with little water, was smeared on top and
mixed in with pitch coating. The red earth, used
in combination with the pitch, made water "taste
sweet"; if pitch alone used, water had "bitter"
taste.

Pitch or gum (ya·bul), obtained from grease-
wood, used to fill walnut-shell dice (FP).

317 Asphalt.- Lumps of asphalt brought into area
[439 by "the Indians from around Ventura, when the
574] latter came up for piñons. The Tübatulabal also
visited at Ventura, and one of the things they
brought back from the ocean was asphalt" (SM).
This commodity used in variety of ways, some of
which were: to attach prong to shaft of harpoon,
to attach bone point to fish hook, to cement
foreshaft in cane mainshaft of arrow, and socket
arrowheads into foreshaft, to secure knife blade
in handle, to attach basket hopper to mortar.
Asphalt also used to smear over fishlines made
of native twine, and lumps of it served as knob
handles for bone, cactus spine awls. Asphalt was
softened by melting; often applied with small
stick. Gifford and Schenck (p. 53) also note
presence of asphalt beds on surface in hills SW